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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/507,079	02/18/2000	Masataka Kadowaki	10876.45US01	8450
23552	7590	10/16/2006		
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903				
			EXAMINER HANDAL, KAITI V	
			ART UNIT 1764	PAPER NUMBER

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/507,079

Applicant(s)

KADOWAKI ET AL.

Examiner

Kaity Handal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 7-9 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4, 7-9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Skala et al. (US 6,132,689).

Regarding claim 1, Skala teaches a CO remover comprising: an air mixer (fig. 1, 30) for mixing air with hydrogen-rich gas including CO to generate mixed gas (col. 6, lines 12-21); a selective oxidative catalytic device (illustrated in Figure 1) for selectively oxidizing the CO by having the mixed gas pass through a selective oxidative catalyst bed/catalyst layers (24); the selective oxidative catalytic device including a gas passing tube/reactor (2) that has the selective oxidative catalyst bed/catalyst layers (24); a gas blending unit/partition (8) within the selective oxidation catalyst beds/catalyst layers (24) from an inner surface of the gas passing tube/reactor (2) (as illustrated) and remaining part of the mixed gas that is passing through the catalyst bed/catalyst layers (24) nearer to the inner surface of the gas passing tube/reactor (2); wherein the gas blending unit/mixing chamber (30) is formed from an element/partition (8) projecting inward from the inner surface of the

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gas passing tube/reactor (2) so as to partially obstruct the gas passing tube/reactor (2) (as illustrated).

Regarding claims 7 and 9, Skala teaches wherein the element/partition (8) is disposed around the inner surface of the gas passing tube/reactor (2). Skala fails to explicitly disclose wherein said partition (8) is a washer ring circularly disposed around the inner surface, however, Skala does disclose that said partition can be any turbulator (col. 9, lines 36-40)). Change in size and shape is not patently distinct over the prior art absent persuasive evidence that the particular configuration of the claimed invention is significant. See *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). MPEP 2144.04[R-1]

Regarding claim 4, Skala further teaches a cooling mechanism which includes a heat sink/coolant channels (16) (as illustrated) adjacent to the outer surface of the gas passing tube (illustrated).

Regarding claim 8, Skala further teaches wherein a portion of the internal sectional area of the gas passing tube/reactor (2) (illustrated in figure 1) is obstructed by the element/partition (8). While the reference does not explicitly disclose the specific percentage of the internal sectional area, which is being obstructed, the size of the element, and therefore the specific percentage of the internal sectional area, which is being obstructed, is not considered to confer patentability to the claims. As the amount of cooling provided to the remover is variable(s) that can be modified, among others, by adjusting said size of the

element, and therefore the specific percentage of the internal sectional area which is being obstructed, with said cooling increasing as the size of the element and the specific percentage of the internal sectional area which is being obstructed is increased, the precise size of the element would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed size of the element and the specific percentage of the internal sectional area, which is being obstructed, cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the size of the element and the specific percentage of the internal sectional area which is being obstructed in the remover of Trocciola et al. to obtain the desired cooling (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Regarding claim 12, Skala teaches wherein a length between a start of the selective oxidative catalyst bed/catalyst layers (24) in a direction of a flow of the mixed gas and the gas blending unit/partition (8) is no shorter than $\frac{1}{3}$ of a length between the start of the selective oxidative catalyst bed/catalyst layers (24) and the end of the selective oxidative catalyst bed in the direction of the flow of the mixed gas (illustrated in Fig. 1).

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 10249 or (g) prior art under 35 U.S.C. 103(a).

Response to Arguments

2. Applicant's arguments, see Remarks, filed 9/27/2006, with respect to the rejection(s) of claim(s) 1, 4, 7-9 and 12 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Skala et al. (US 6,132,689).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KH



10/02/2006


ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER